CCGPS Precalculus
Unit 5 Matrices
Evaluating Matrices

Name Key

Date _____ Block _____

EQ: How do we perform operations on matrices?

MCC9-12.N.VM.8 (+) Add, subtract, and multiply matrices of appropriate dimensions
MCC9-12.N.VM.9 (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associate and distributive properties

$$A=\begin{bmatrix}7 & -2\\ -1 & 0\end{bmatrix} \quad B=\begin{bmatrix}3 & 7\\ -2 & 4\end{bmatrix} \quad C=\begin{bmatrix}1 & -5\\ -3 & 2\end{bmatrix} \quad D=\begin{bmatrix}2 & -3 & 1\\ 4 & 2 & -1\\ -2 & 3 & -3\end{bmatrix}$$

$$E=\begin{bmatrix}4 & 3 & 12\\ -2 & -6 & -1\end{bmatrix} \quad F=\begin{bmatrix}6 & 5 & -2\\ 2 & 4 & -1\\ 3 & 1 & 4\end{bmatrix}$$

Given the following matrices, simplify the expressions. Show all work on a separate piece of paper.

1. $A-4C=\begin{bmatrix}3 & 18\\ 11 & -8\end{bmatrix}$

2. $BE=\begin{bmatrix}-2 & -33 & 29\\ -16 & -30 & -28\end{bmatrix}$

3. $-\frac{3}{2}E=\begin{bmatrix}-6 & -\frac{9}{2} & -18\\ 3 & 9 & \frac{3}{2}\end{bmatrix}$

4. $3A+C=\begin{bmatrix}22 & -11\\ -6 & 2\end{bmatrix}$

5. $ED=\begin{bmatrix}-4 & 30 & -35\\ -26 & -9 & 7\end{bmatrix}$

6. $F-D=\begin{bmatrix}4 & 8 & -3\\ -2 & 2 & 0\\ 5 & -2 & 7\end{bmatrix}$

7. $CB=\begin{bmatrix}13 & -13\\ -13 & -13\end{bmatrix}$

8. $A^2=\begin{bmatrix}51 & -14\\ -7 & 2\end{bmatrix}$

9. $\frac{1}{2}(A-B)=\begin{bmatrix}2 & -\frac{9}{2}\\ \frac{1}{2} & -2\end{bmatrix}$

10. $C(A+B)=\begin{bmatrix}25 & -15\\ 36 & -7\end{bmatrix}$

11. $FE=$ No Solution

~~Dimensions~~

12. $(B-C)E=\begin{bmatrix}-16 & -66 & 12\\ 0 & -9 & 10\end{bmatrix}$

13. $AB+C=\begin{bmatrix}26 & 36\\ -6 & -5\end{bmatrix}$

14. $A+2B-3C=\begin{bmatrix}10 & 27\\ 4 & 2\end{bmatrix}$

15. $3D-F=\begin{bmatrix}0 & -14 & 5\\ 10 & 2 & -2\\ -9 & 8 & -13\end{bmatrix}$